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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,161	01/18/2002	Satoshi Kume	025311-0114	7612
22428	7590	04/29/2004	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			KORNAKOV, MICHAIL	
			ART UNIT	PAPER NUMBER
			1746	

DATE MAILED: 04/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/050,161

Applicant(s)

KUME, SATOSHI

Examiner

Michael Komakov

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is **FINAL**. ☒ 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 8-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 7 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☒ Claim(s) 1-13 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 03/25/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 1-7 in Paper dated 03/08/2004 is acknowledged. Claims 8-13 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Claims 1-7 are examined on the merits.

### ***Drawings***

2. Figures 7 and 8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities: with regard to Fig.7 page 1, line 24 recites "a substrate 1". Apparently, it's a typo and a substrate 71 should be indicated. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 provides for the use of substrate cleaning apparatus described in claim 1, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 7 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd. App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 4, 6, 7 are rejected under 35 U.S.C. 102(b) as being anticipated by JP05-206095.

JP'095 discloses substrate ultrasonic treating apparatus, which comprises processing tub 9, to be filled with processing liquid, ultrasonic generation source, disposed inside the processing tub and substrate conveyance device to support the substrate, while substrate is immersed and ultrasonically treated in processing liquid. The apparatus of JP'095 is fully capable of providing ultrasonic treatment to any substrate surface, including the back surface, as soon as this surface faces the ultrasonic generation source. The apparatus of JP'095 further includes nozzles (94, 95) for supplying the processing fluid, the said nozzles positioned between the substrate and ultrasonic generation source (reads on "propagation control apparatus", as instantly recited), thus being fully capable of squirting a processing fluid in the propagation path of ultrasonic waves (abstract, paragraph 0026, Fig. 1-3).

Therefore, all the limitations of instant claims are inherently or explicitly met by JP'095.

8. Claims 1, 2, 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Busnaina (U.S. 2001/0013355).

Busnaina describes megasonic cleaning system, which includes a container 206 to be filled with cleaning media, array of transducers 210a', disposed in container and immersed during the treatment, the said array of transducers is provided with openings 211, which reads on "plurality of oscillation sources, disposed in a dispersed manner",

Art Unit: 1746

substrate holder 208 (reads on “a retainer”, as instantly claimed) (Fig.8; paragraph 0034). The apparatus of Busnaina is fully capable of irradiating ultrasonic waves onto a back surface of the substrate.

Therefore, all the limitations of instant claims are inherently or explicitly met by Busnaina.

9. Claims 1, 3, 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Harvey et al (U.S. 2002/0166569).

Harvey teaches apparatus for semiconductor substrate cleaning, which comprises horizontal cleaning chamber 101 to be filled with cleaning solution, transducer 102 to be immersed during the cleaning procedure, horizontal support rollers 604 for rotation substrate during the cleaning procedure, jet nozzle 104 to generate sufficient fluid force at the wafer surface to cause it to rotate (Fig. 6; paragraph 0044). It is noticed here, that the details of claimed rotary mechanism are not currently elucidated and therefore the jet nozzle of Harvey for producing substrate rotation is readable on the “rotary mechanism for rotating the substrate, retained by retainer””, as instantly recited).

Therefore, all the limitations of instant claims are inherently or explicitly met by Harvey.

***Allowable Subject Matter***

10. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: claim 5 recites an ultrasonic cleaning apparatus, wherein an ultrasonic oscillator is disposed in the processing bath and being immersed in the cleaning chemical during the treatment, and wherein a plate like member with a plurality of openings is positioned in a path of ultrasonic waves, propagating through the cleaning chemical and between the said oscillator and a retainer capable of holding the substrate in such a way that a back side of the substrate being treated. No prior art that anticipates or suggests fairly the structural limitations of claim 5 has been located as of the date of this office action.

11. Applicant should note that additional prior art cited in PTOL-892 shows the general state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*M. Kornakov*

Michael Kornakov  
Examiner  
Art Unit 1746

04/26/2004